power are applied to the plural windings, and (b) the amount of current applied to individual plural windings so that for different distributions of electromagnetic fields different amounts of current are applied to the individual windings.

B1 cnt

5. (amended) The method of claim 1 wherein each winding includes first and second terminals, the first terminal being connected via a first series capacitor to an output terminal of a matching network driven by a source of the power, the second terminal being connected via a second series capacitor to a ground terminal, the varying steps for the current in the individual windings being performed by varying the value of at least one capacitor associated with each individual winding and the total power in the windings.

B2

7. (amended) The method of claim 6 wherein the maintaining and changing steps are performed by varying the values of impedances associated with the individual windings and the total power applied to the coil.

B3

11. (amended) An inductive plasma processor for processing a workpiece, comprising a plasma excitation coil, the coil including plural parallel connected windings, a source for supplying power to the plural parallel connected windings, variable impedance arrangements respectively coupled with the plural parallel connected windings for varying the currents flowing from the source to each of the plural parallel connected windings, and

B4

a controller for varying the total power the source supplies to the plural parallel connected windings and components of the variable impedance arrangements.

12. (amended) The processor of claim 11 wherein the controller is arranged for varying the total power and the variable impedance arrangements so that for different distributions of electromagnetic fields generated by and supplied by the different windings to the plasma the current flowing in one of the windings remains substantially constant and the current in the remaining windings of the coil changes.

13. (amended) The processor of claim 12 wherein each of the impedance arrangements includes a variable reactance coupled to its respective winding, the variable reactance of each impedance arrangement being arranged for varying the location of the maximum amplitude of a standing wave current in its respective winding, the controller being arranged for varying the values of the variable reactance of each impedance arrangement.

15. (amended) The processor of claim 12 wherein each of the impedance arrangements includes a variable reactance coupled to its respective winding, the variable reactance of each impedance arrangement being arranged for varying the value of the maximum amplitude of a standing wave RF current in its respective winding, the controller being arranged for varying the value of the variable reactance of each impedance arrangement.

17. (amended) The processor of claim 12 wherein the source is an RF source, each of the windings including first and second end terminals and each of the impedance arrangements includes first and second variable capacitors, each of the first capacitors being connected in series with its respective first terminal for supplying RF energy from the RF source to the respective winding, each of the second capacitors being connected in series between its respective second terminal and ground, the controller being arranged for varying the values of the first and second variable capacitors.

B6

19. (amended) The processor of claim 12 wherein the source is an RF source, the frequency of the RF source and the length of the windings being such that there are no substantial standing wave current variations along the length of each winding, and each variable impedance arrangement includes a single variable reactance coupled with each winding, the controller being arranged for varying the value of the variable reactance to control the maximum amplitude of the standing wave current in each winding.

B7

20. An inductive plasma processor for processing a workpiece, comprising a plasma excitation coil, the coil including plural parallel connected windings, a source for supplying power to the plural parallel connected windings, impedance arrangements respectively coupled with the plural parallel connected windings, the power of the source and the values of reactances of the

impedance arrangements being such that (a) the maximum amplitude of a standing wave current in one of the windings differs from the maximum amplitude of a standing wave current in the remainder of the coil and (b) adjacent windings have standing wave current maxima that are radially opposite to each other.

21. (amended) The processor of claim 20 wherein each of the windings is arranged for coupling an electromagnetic field to plasma in the chamber, one of the windings being an exterior winding located so electromagnetic fields generated by it is in proximity to a peripheral wall of the chamber, the remainder of the coil being arranged so electromagnetic fields generated by the remainder of the coil are remote from the chamber peripheral wall, the controller being arranged to cause the values of the total power the source supplies to the coil and of the reactances to be such that the electromagnetic field generated by the exterior winding exceeds the electromagnetic field generated by the remainder of the coil.

B7 cut

22. (amended) The processor of claim 20 wherein each of the windings is arranged for coupling an electromagnetic field to plasma in the chamber, one of the windings being an exterior winding located so an electromagnetic field generated by it is in proximity to a peripheral wall of the chamber, the remainder of the coil being arranged so electromagnetic fields generated by the remainder of the coil are remote from the chamber peripheral wall,

the controller being arranged to cause the values of the total power the source supplies to the coil and the reactances to be such that the electromagnetic field generated by the exterior winding is less than the electromagnetic field generated by the remainder of the coil.

23. (amended) The processor of claim 20 wherein each of the plural parallel connected windings is arranged for coupling an electromagnetic field to plasma in the chamber, one of the windings being an exterior winding located so an electromagnetic field generated by it is in proximity to a peripheral wall of the chamber, the remainder of the coil being arranged so electromagnetic fields generated by the remainder of the coil are remote from the chamber peripheral wall, the controller being arranged to cause the values of the total power the source supplies to the coil and of the reactances to be such that the electromagnetic field generated by the exterior winding is about the same as the electromagnetic field generated by the remainder of the coil.

B7 cont

25. (amended) An inductive plasma processor for processing a workpiece, comprising a plasma excitation coil, the coil including plural connected parallel windings, a source for supplying power to the plural parallel connected windings, impedance arrangements respectively coupled with the plural parallel connected windings, the source frequency and the lengths

B8

of the windings being such that there are no substantial standing wave current variations along the length of each winding, the impedance arrangement coupled with each winding being arranged for controlling the value of the standing wave current in the respective winding.

26. (amended) A method of controlling the plasma flux distribution on a workpiece of an inductive plasma processor including a plasma excitation coil having a center axis and plural parallel connected windings adapted to be driven by an excitation source, the plural parallel connected windings being concentric with the axis so an exterior winding of the coil surrounds the remainder of the coil, the method comprising positioning the exterior winding relative to the remainder of the coil so the plasma density incident on the workpiece has a predetermined desired relationship.

28. (amended) An inductive plasma processor for processing a workpiece, comprising a plasma excitation coil, the coil including at least one winding, a source for supplying power to the at least one winding, the source frequency and the length of the at least one winding being such that there are no substantial standing wave current variations along the length of the at least one winding.

Please add new claims 31-33 as follows:

--31. Apparatus for controlling the distribution of

electromagnetic fields for exciting a plasma in a vacuum plasma processor for processing a workpiece, the apparatus comprising an excitation coil for launching the fields, the coil including plural parallel connected windings for coupling electromagnetic fields to plasma in the chamber, and a controller for varying (a) the total amount of power applied to the plural parallel connected windings so that for different distributions of electromagnetic fields different amounts of total power are applied to the plural parallel connected windings, and (b) the amount of current applied to individual plural windings of the plural parallel connected windings so that for different distributions of electromagnetic fields different amounts of current are applied to the individual windings.

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--32. The apparatus of claim 31 wherein the plural parallel connected windings are arranged so (a) one of the windings is an exterior winding located so electromagnetic fields generated by it are in proximity to a peripheral wall of the chamber, and (b) electromagnetic fields generated by the remainder of the coil are remote from the chamber peripheral wall, and the controller is arranged for varying the current applied to the exterior winding so the electromagnetic field generated by the exterior winding exceeds the electromagnetic field generated by the remainder of the coil.

--33. The apparatus of claim 31 wherein the plural parallel connected windings are arranged so (a) one of the plural parallel

connected windings is an exterior winding located so electromagnetic fields generated by it are in proximity to a peripheral wall of the chamber, and (b) electromagnetic fields generated by the remainder of the coil are remote from the chamber peripheral wall, and the controller is arranged for varying the current applied to the exterior winding so the electromagnetic field generated by the exterior winding is less than the electromagnetic field generated by the remainder of the coil.--

B10 cont